REMARKS

Status of the Claims

Claims 1-38 were pending in the application. By this amendment, claims 32 and 34 are cancelled. Thus, the status of the claims is as follows:

Claims 1-6, 8, 13, 14, 16-23, 26-28, 31, 33, 35, and 37 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawashima et al, U.S. Patent No. 6,079,862 ("Kawashima") in view of Miramonti et al, U.S. Patent No. 5,864,640 ("Miramonti");

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, as applied to claim 1 above, and further in view of Okauchi et al, U.S. Patent No. 5,864,360 ("Okauchi");

Claims 9 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, as applied to claim 1 above, and further in view of Greenberg et al, U.S. Patent No. 3,267,431 ("Greenberg");

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, and further in view of Mertelmeier et al, U.S. Application Publication No. 2003/0081821 ("Mertelmeier") and further in view of Cham et al, U.S. Patent No. 6,597,801 ("Cham");

Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, and further in view of Bos et al, U.S. Patent No. 6,396,397 ("Bos") and Examiner's Official Notice;

Claims 15, 24, 25, 29 and 30 are rejected 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, as applied to claim 28 above, and further in view of Baker et al, U.S. Patent No. 3,564,132 ("Baker"); and

Claims 36 and 38 are rejected 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, as applied to claims 1, 17, 21, and 26 above, and further in view of Ito et al, U.S. Patent No. 6,812,835 ("Ito").

By this response, Claims 1, 17, 21, and 26 have been amended to more particularly point out and distinctly claim the present invention and Claims 32 and 34 are cancelled in view of the incorporation of the limitations thereof into the independent claims. Also by this response, new claim 39 has been added. Support for claim 39 can be found in at least paragraph [0038] of the present specification.

35 U.S.C. § 103(a) Rejections

The rejection of claims 1-6, 8, 13, 14, 16-23, 26-28, 31, 33, 35, and 37 under 35 U.S.C. § 103(a), as being unpatentable over Kawashima in view of Miramonti, is respectfully traversed based on the following.

The invention of claim 1 can be seen in the claim which recites:

> A measurement system for measuring an object based on images obtained by plural cameras, the system comprising:
>
> a positional control portion for controlling positions of the cameras to change photographing directions of the cameras;
>
> a two-dimensional measurement portion for conducting two-dimensional measurement of the object based on the image of the object, the image being obtained by at least one of the cameras;
>
> a stereoscopic measurement portion for conducting stereoscopic measurement of the object based on the images of the object, the stereoscopic measurement including distance information for a plurality of points on the object, the images being obtained by at least two of the cameras, said at least two cameras including at least the camera for providing an image for the two-dimensional measurement portion, the stereoscopic measurement portion being configured to perform the stereoscopic measurement when a first one and a second one of the cameras are controlled to photograph an overlapping range which includes the object; and
>
> a switching portion for switching between the two-dimensional measurement portion and the stereoscopic measurement portion to perform an operation;
>
> wherein in response to the measurement of the object by the two-dimensional measurement portion based on the image obtained by at least the first one of the cameras,
>
> the positional control portion is adapted to respond by controlling the positions of at least the first one and the second one of

the cameras, based on a detected position of the object by the first one of the cameras, so that the first one and the second one of the cameras photograph the overlapping range which includes the object, and

the stereoscopic measurement portion conducts stereoscopic measurement of distances of the plurality of points on the object.

As shown in the amended claim above, the invention of claim 1 is directed to a measurement system that uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object using a two-dimension technique, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As discussed below, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 1.

Kawashima discloses a lighting system that automatically tracks a target. A spotlight is controlled by horizontal and vertical drive means under the control of a movable control unit. The target is tracked by a pair of CCD cameras which are controlled by movable control units. Image units recognize the target and provide input to coordinate calculating units. The outputs of the coordinate calculation units are used by the three dimensional calculation unit to locate a point on the target in three dimensions. Of importance, the inputs to the three dimensional calculation unit are not images, but rather coordinates of the CCD cameras. Because of this, the output of the three dimensional calculation unit is only a single point (xt, yt, zt) (16:34-42).

The office action acknowledges that Kawashima does not disclose a stereoscopic measurement that includes distance information for a plurality of points on the object. Moreover, Kawashima also fails to disclose a system that is configured so that when one of the cameras detects and measures an object, that detection by one camera triggers the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. Instead, Kawashima shows two cameras that work independently and that

movement of one camera is not dependent on activity of the other camera. In contrast to the invention of claim 1, there is no interactivity between the cameras in Kawashima. Thus, because Kawashima does not disclose several elements of claim 1, this reference cannot anticipate or render obvious claim 1.

The examiner cites Miramonti for the proposition that it is known to perform stereoscopic measurements including distance information for a plurality of points on the object being examined. However, regardless of whether Miramonti discloses stereoscopic measurements, Miramonti does not disclose or suggest a system that is configured like claim 1 such that when one camera detects and measures an object, that detection by one camera triggers the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. Thus, because Miramonti does not disclose several elements of claim 1, this reference cannot anticipate or render obvious claim 1.

Additionally, as a combination, Kawashima and Miramonti also fail to disclose or suggest the invention of claim 1. As noted above, Miramonti merely discloses a system that can make three-dimensional measurements. Even if three-dimensional measurement capability is added to the system of Kawashima, however, that combination would not suggest the interaction of elements in the manner claimed in the invention of claim 1. Specifically, adding three-dimensional measurement capability to Kawashima would not suggest that based on a two-dimensional measurement of an object, the measurement system is triggered to control the direction of at least two cameras to monitor the detected object and then perform a stereoscopic measurement of that object based on images from both cameras.

The invention of claim 1 is more than an aggregation of parts. Instead, the claim, as amended, recites not just a series of components but a system where the components are configured to work together in a specific and coordinated way, as claimed, to provide a system that can detect with one camera but then be triggered on that detection to perform a stereoscopic measurement using plural cameras. Thus, even if prior art can be found to disclose systems with plural cameras, measuring systems, and other building blocks of the claim, that does not disclose or suggest the invention of claim 1.

Because Kawashima and Miramonti singly or in combination fail to disclose or suggest the invention of claim 1, these references cannot render this claim obvious.

Claims 2-6, 8, 13, 14, 16, and 31 directly or indirectly depend from claim 1 and thus include every limitation of claim 1. Accordingly, claims 2-6, 8, 13, 14, 16, and 31 are likewise considered nonobvious over the cited references for at least the same reasons as claim 1.

The discussion will now turn to claim 17 and to claims 18-20 and 33 which depend directly or indirectly from claim 17. The invention of claim 17 can be seen in the claim which recites:

> A measurement system for measuring an object based on images obtained by two cameras, the system comprising:
>
> a camera position control system for outputting camera position control signals to change photographing directions of the cameras, said camera position control system being configured to enable control of directions of the two cameras independently from each other;
>
> a two-dimensional measurement device for conducting two-dimensional measurement of the object based on the images of the object, the images being obtained by at least one of the cameras;
>
> a stereoscopic measurement device for conducting stereoscopic measurement of the object based on the images of the object, the stereoscopic measurement including distance information for a plurality of points on the object, the images being obtained by both of the cameras, the stereoscopic measurement device being configured to perform the stereoscopic measurement when both of the cameras are controlled to photograph an overlapping range which includes the object; and
>
> a switching device for switching between the two-dimensional measurement device and the stereoscopic measurement device to perform an operation;
>
> wherein in response to the measurement of the object by the two-dimensional measurement device based on the image obtained by at least the first one of the cameras,
>
> the camera position control system is adapted to respond by controlling the positions of both of the cameras, based on a detected position of the object by the first one of the cameras, so that the first

one and the second one of the cameras photograph the overlapping range which includes the object, and

the stereoscopic measurement device conducts stereoscopic measurement of distances of the plurality of points on the object.

As shown in the amended claim above, the invention of claim 17 is directed to a measurement system that, among other things, uses two cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object using a two-dimension, that detection can trigger the system to control the direction of both of the cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As discussed below, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 17.

As noted above with respect to the rejection of claim 1, Kawashima discloses a lighting system that automatically tracks a target. The office action acknowledges that Kawashima does not disclose that the stereoscopic measurement includes distance information for a plurality of points on the object. Moreover, Kawashima also fails to disclose a surveillance system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. Instead, Kawashima shows two cameras that work independently and that movement of one camera is not dependent on activity of the other camera. Because Kawashima does not disclose several elements of claim 17, this reference, by itself, cannot anticipate or render obvious claim 17.

As before, the examiner cites Miramonti for the proposition that it is known to disclose stereoscopic measurements including distance information for a plurality of points on the object being examined. However, as discussed above, regardless of whether Miramonti discloses stereoscopic measurements including distance information for a plurality of points on an object, Miramonti does not disclose a system that is configured so that when

one of the cameras detects and measures an object, that detection can trigger the system to control the direction of two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. Accordingly, Miramonti, by itself, also cannot anticipate or render obvious claim 17.

As a combination, Kawashima and Miramonti fail to suggest the invention of claim 17. Miramonti merely discloses a system that can make three-dimensional measurements. Even if three-dimensional measurement capability is added to the system of Kawashima, however, that combination would not suggest the interaction of elements in the manner claimed in the invention of claim 17. Specifically, adding three-dimensional measurement capability to Kawashima would not suggest that based on a two-dimensional measurement of an object, the measurement system is or should be triggered to control the direction of two cameras to monitor the detected object and then perform a stereoscopic measurement of that object based on images from both cameras. Because Kawashima and Miramonti singly or in combination fail to disclose or suggest the invention of claim 17, these references cannot render this claim obvious.

Claims 18-20 and 33 directly or indirectly depend from claim 17 and thus include every limitation of claim 17. As claim 17 is considered nonobvious over the combination of Kawashima and Miramonti, claims 18-20 and 33 are likewise considered nonobvious for at least the same reasons.

The discussion will now turn to claim 21 and to claims 22, 23 and 35 which depend from claim 21. The invention of claim 21 can be seen in the claim which recites:

> A measurement system for measuring an object based on images obtained by plural cameras, the system comprising:
> a positional control portion for controlling positions of the cameras to change photographing directions of the cameras;
> a two-dimensional measurement portion for conducting two-dimensional measurement of the object based on the image of the object, the image being obtained by at least one of the cameras;
> a stereoscopic measurement portion for conducting stereoscopic measurement of the object based on the images of the object, the stereoscopic measurement including distance information for a plurality of points on the object, the images being obtained by at

least two of the cameras, said at least two cameras including at least the camera for providing an image for the two-dimensional measurement portion, the stereoscopic measurement portion being configured to perform the stereoscopic measurement when a first one and a second one of the cameras are controlled to photograph an overlapping range which includes the object; and

a switching portion for switching between the two-dimensional measurement portion and the stereoscopic measurement portion to perform an operation, said switching portion being configured to control the provision of images from the cameras to the measurement portions such that said at least two of the cameras from which images are obtained for conducting stereoscopic measurement include said at least one of the cameras from which the image of the object is obtained for the two-dimensional measurement portion;

wherein in response to the measurement of the object by the two-dimensional measurement portion based on the image obtained by at least the first one of the cameras,

the positional control portion is adapted to respond by controlling the positions of at least the first one and the second one of the cameras, based on a detected position of the object by the first one of the cameras, so that the first one and the second one of the cameras photograph the overlapping range which includes the object, and

the stereoscopic measurement portion conducts stereoscopic measurement of distances of the plurality of points on the object.

As shown in the amended claim above, the invention of claim 21 is directed to a measurement system that, among other things, uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As discussed below, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 21.

As noted above with respect to the rejection of claims 1 and 17, Kawashima fails to disclose a surveillance system with plural cameras that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the

direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. Instead, Kawashima shows two cameras that work independently and that movement of one camera is not dependent on activity of the other camera. Because Kawashima does not disclose several elements of claim 21, this reference, by itself, cannot anticipate or render obvious claim 21.

As before, the examiner cites Miramonti for the proposition that it is known to disclose stereoscopic measurements including distance information for a plurality of points on the object being examined. However, as discussed above, regardless of whether Miramonti discloses stereoscopic measurements including distance information for a plurality of points on an object, Miramonti does not disclose a system with plural cameras that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. Accordingly, Miramonti, by itself, also cannot anticipate or render obvious claim 21.

Finally, as a combination, Kawashima and Miramonti fail to suggest the invention of claim 21. Miramonti merely discloses a system that can make three-dimensional measurements. Even if three-dimensional measurement capability is added to the system of Kawashima, however, that combination would not suggest the interaction of elements in the manner claimed in the invention of claim 21. Specifically, adding three-dimensional measurement capability to Kawashima would not suggest that based on a two-dimensional measurement of an object, the measurement system is or should be triggered to control the direction of at least two cameras to monitor the detected object and then perform a stereoscopic measurement of that object based on images from both cameras. Because Kawashima and Miramonti singly or in combination fail to disclose or suggest the invention of claim 21, these references cannot render this claim obvious.

Claims 22, 23 and 35 directly or indirectly depend from claim 21 and thus include every limitation of claim 21. As claim 21 is considered nonobvious over the combination of

Kawashima and Miramonti, claims 22, 23 and 35 are likewise considered nonobvious for at least the same reasons.

The discussion will now turn to claim 26 and to claims 27, 28 and 37 which depend from claim 26. The invention of claim 26 can be seen in the claim which recites:

> A surveillance control and object detection apparatus for controlling at least two cameras and for detecting objects based on image data obtained from the cameras, the apparatus comprising:
>
> a camera positional control device which is configured to generate signals to control the positions of the cameras to change photographing directions of the cameras;
>
> a two-dimensional image processing system which is configured to perform two-dimensional evaluation of image data obtained by at least a first one of the cameras to detect an object;
>
> a stereoscopic image processing system which is configured to perform stereoscopic evaluation of image data obtained from both the first one of the cameras and a second one of the cameras to detect the object, the stereoscopic evaluation including determining distance information for a plurality of points on the object, said first one and second one of the cameras including at least the camera for providing an image for the two-dimensional image processing system, the stereoscopic image processing system being configured to perform the stereoscopic evaluation when the first one and the second one of the cameras are controlled to photograph an overlapping range which includes the object; and
>
> a controller which is configured to control the operation of the cameras and the camera positional control device, said controller also being configured to control a mode of operation of the apparatus such that in a first mode image data obtained by at least a first one of the cameras is evaluated by said two-dimensional image processing system and in a second mode image data obtained from both the first one of the cameras and a second one of the cameras are evaluated by said stereoscopic image processing system, said controller further being configured to switch between said first and second modes of operation based on a current mode of said apparatus and an output from one of the two-dimensional image processing system and the stereoscopic image processing system;
>
> wherein in response to the measurement of the object by the two-dimensional image processing system based on the image obtained by at least the first one of the cameras,
>
> the camera positional control device is adapted to respond by controlling the positions of at least the first one and the second one of

> the cameras, based on a detected position of the object by the first one of the cameras, so that the first one and the second one of the cameras photograph the overlapping range which includes the object, and
>
> the stereoscopic image processing system conducts stereoscopic measurement of distances of the plurality of points on the object.

As shown in the amended claim above, the invention of claim 26 is directed to a surveillance control and object detection apparatus that, among other things, uses a plurality of cameras and measurement systems to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As discussed below, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 26.

As noted above with respect to the rejection of claims 1, 17 and 21, Kawashima fails to disclose a surveillance system with plural cameras that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. Instead, Kawashima shows two cameras that work independently and that movement of one camera is not dependent on activity of the other camera. Because Kawashima does not disclose several elements of claim 26, this reference, by itself, cannot anticipate or render obvious claim 26.

As before, the examiner cites Miramonti for the proposition that it is known to disclose stereoscopic measurements including distance information for a plurality of points on the object being examined. However, as discussed above, regardless of whether Miramonti discloses stereoscopic measurements including distance information for a plurality of points on an object, Miramonti does not disclose a system with plural cameras that is configured so that when one of the cameras detects and measures an object, that detection can

trigger the system to control the direction of two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. Accordingly, Miramonti, by itself, also cannot anticipate or render obvious claim 26.

Finally, as a combination, Kawashima and Miramonti fail to suggest the invention of claim 26. Miramonti merely discloses a system that can make three-dimensional measurements. Even if three-dimensional measurement capability is added to the system of Kawashima, however, that combination would not suggest the interaction of elements in the manner claimed in the invention of claim 26. Specifically, adding three-dimensional measurement capability to Kawashima would not suggest that after a two-dimensional measurement of an object, the measurement system is or should be triggered to control the direction of at least two cameras to monitor the detected object and then perform a stereoscopic measurement of that object based on images from both cameras. Because Kawashima and Miramonti singly or in combination fail to disclose or suggest the invention of claim 26, these references cannot render this claim obvious.

Claims 27, 28 and 37 directly or indirectly depend from claim 26 and thus include every limitation of claim 26. As claim 26 is considered nonobvious over the combination of Kawashima and Miramonti, claims 27, 28 and 37 are likewise considered nonobvious for at least the same reasons.

Accordingly, in view of the forgoing, it is respectfully requested that the rejection of claims 1-6, 8, 13, 14, 16-23, 26-28, 31, 33, 35, and 37 under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, be reconsidered and withdrawn.

The rejection of claim 7 under 35 U.S.C. § 103(a), as being unpatentable over Kawashima in view of Miramonti, as applied to claim 1 above, and further in view of Okauchi, is respectfully traversed based on the following.

Claim 7 depends from claim 1 and thus includes every limitation of claim 1. As shown in the discussion regarding claim 1 above, the invention of claim 1 is directed to a

measurement system that uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As previously discussed, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 1. Neither Kawashima nor Miramonti singly or collectively disclose a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

Similarly, Okauchi, singly or in combination with Kawashima and Miramonti, also fails to disclose or suggest each limitation of claim 1. The Office Action cites to Okauchi for disclosing that two cameras can move symmetrically. Okauchi relates to a multi-eye image pick-up apparatus using a plurality of video cameras where when a power supply voltage for enabling an image pick-up operation is supplied to the apparatus, the optical axis angle control sets the first and second video camera portions at a predetermined optical axis angle. Both cameras may be controlled symmetrically to focus on an object. Okauchi, however, fails to disclose or suggest a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. Hence, Okauchi fails to disclose or suggest each limitation of claim 1.

If the teachings of Okauchi are added to those of Kawashima and Miramonti, the resultant combination still fails to disclose or suggest the invention of claim 1. Specifically, adding the teaching from Okauchi that two cameras can move symmetrically does not suggest the specific cooperation of elements recited in claim 1 where after a two-dimensional measurement of an object, the measurement system is triggered to control the direction of at

least two cameras to monitor the detected object and then perform a stereoscopic measurement of that same object based on images from both cameras. Therefore, the combination of Kawashima, Miramonti and Okauchi likewise fails to disclose or suggest each limitation of claim 1 and thus fails to render claim 1 obvious. As claim 7 includes every limitation of claim 1, claim 7 is likewise considered nonobvious for at least the same reasons.

Accordingly, it is respectfully requested that the rejection of claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, as applied to claim 1 above, and further in view of Okauchi, be reconsidered and withdrawn.

The rejection of claims 9 and 10 under 35 U.S.C. § 103(a), as being unpatentable over Kawashima in view of Miramonti, as applied to claim 1 above, and further in view of Greenberg, is respectfully traversed based on the following.

Claims 9 and 10 directly or indirectly depend from claim 1 and thus include every limitation of claim 1. As shown in the discussion regarding claim 1 above, the invention of claim 1 is directed to a measurement system that uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As previously discussed, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 1. Neither Kawashima nor Miramonti singly or collectively disclose a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

Similarly, Greenberg, singly or in combination with Kawashima and Miramonti, also fails to disclose or suggest each limitation of claim 1. Greenberg relates to adaptive computing techniques where a recognition system is trained to recognize specimen patterns. The Office Action cites to Greenberg for having an indicator to show a mode switch and an

alarm output portion that raises the alarm, or turns on the indicator, when the switching portion switches. Greenberg, however, fails to disclose or suggest a system that is configured so that when one of its cameras detects and measures an object (or, "specimen pattern" with regard to Greenberg), that detection can or should trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. In Greenberg, there is no interactivity of elements in the manner claimed in the invention of claim 1.

Hence, even if the teachings of Greenberg are combined with those of Kawashima and Miramonti , the combination fails to disclose or suggest the specific coordination of elements claimed in claim 1. Specifically, adding the teaching from Greenberg pattern recognition does not suggest the specific cooperation of elements recited in claim 1 where after a two-dimensional measurement of an object, the measurement system is triggered to control the direction of two cameras to monitor the detected object and then perform a stereoscopic measurement of that same object based on images from both cameras. Accordingly, the combination of Kawashima, Miramonti and Greenberg likewise fails to disclose or suggest each limitation of claim 1 and thus fails to render claim 1 obvious. As claims 9 and 10 include every limitation of claim 1, claims 9 and 10 are likewise considered nonobvious for at least the same reasons.

Accordingly, it is respectfully requested that the rejection of claims 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, as applied to claim 1 above, and further in view of Greenberg, be reconsidered and withdrawn.

The rejection of claim 11 under 35 U.S.C. § 103(a), as being unpatentable over Kawashima in view of Miramonti, and further in view of Mertelmeier and further in view of Cham, is respectfully traversed based on the following.

Claim 11 depends from claim 1 and thus includes every limitation of claim 1. As shown in the discussion regarding claim 1 above, the invention of claim 1 is directed to a measurement system that uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can

trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As previously discussed, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 1. Neither Kawashima nor Miramonti singly or collectively disclose a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

Similarly, Mertelmeier, singly or in combination with Kawashima and Miramonti, also fails to disclose or suggest each limitation of claim 1. Mertelmeier is a method and examination apparatus for generating three-dimensional, multiply resolved volume images on the basis of two-dimensional projection images. The images can be registered with an apparatus for producing radiation images with a radiation source and a radiation receiver in an exposure procedure of the examination object. The Office Action cites to Mertelmeier for disclosing switching in alternation between a high and low resolution for stereoscopic imaging to develop multiply resolved images. Mertelmeier, however, fails to disclose or suggest a system that is configured so that when one camera (or, "apparatus" with regard to Mertelmeier) detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. In Mertelmeier, there is no interactivity of elements in the manner claimed in the invention of claim 1. Thus, Mertelmeier does not disclose or suggest each limitation of claim 1.

Therefore the combination of Kawashima and Miramonti, and further in view of Miramonti, fails to disclose or suggest each limitation of claim 1 and thus fails to render claim 1 obvious. Accordingly, claim 11 is likewise considered nonobvious over the combination of Kawashima and Miramonti, and further in view of Mertelmeier for at least the same reasons.

Cham discloses a method for registering a plurality of object models in at least one image, one feature per model at a time. The Office Action cites to col. 8, lines 35-54 of Cham for disclosing effective search of images for size-based features and for having multiple resolutions of an image. Cham, however, does not disclose or suggest a system that is configured so that when one camera detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. In Cham, there is no interactivity of elements in the manner claimed in the invention of claim 1. Thus, Cham does not disclose or suggest each limitation of claim 1.

Therefore, the combination of Kawashima, Miramonti, Mertelmeier and Cham likewise fails to disclose or suggest each limitation of claim 1 and thus fails to render claim 1 obvious. As claim 11 includes every limitation of claim 1, Claim 11 is likewise considered nonobvious for at least the same reasons.

Accordingly, it is respectfully requested that the rejection of claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, and further in view of Mertelmeier and further in view of Cham, be reconsidered and withdrawn.

The rejection of claim 12 under 35 U.S.C. § 103(a), as being unpatentable over Kawashima in view of Miramonti, and further in view of Bos and Examiner's Official Notice, is respectfully traversed based on the following.

Claim 12 depends from claim 1 and thus includes every limitation of claim 1. As shown in the discussion regarding claim 1 above, the invention of claim 1 is directed to a measurement system that uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As previously discussed, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 1. Neither Kawashima nor Miramonti singly or collectively disclose a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

Similarly, Bos, singly or in combination with Kawashima and Miramonti, fails to disclose or suggest each limitation of claim 1. Bos discloses a vehicular stereoscopic imaging system providing a calculation of distance between one or more sensors on a vehicle and an object in a target scene remote from the vehicle. The Office Action cites Bos for disclosing a color filter on sensors (which the Office Action claims is equivalent to a camera) to process image data corresponding to only a red color. Bos, however, does not disclose or suggest a system that is configured so that when one camera (or, "sensor" with regard to Bos) detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. In Bos, there is no interactivity of elements in the manner claimed in the invention of claim 1. Hence, Bos fails to disclose or suggest each limitation of claim 1.

Therefore the combination of Kawashima and Miramonti, and further in view of Bos, fails to disclose or suggest each limitation of claim 1 and thus fails to render claim 1 obvious. Accordingly, claim 12 is likewise considered nonobvious over the combination of Kawashima and Miramonti, and further in view of Bos for at least the same reasons.

Similarly, the Examiner's Official Notice, singly or in combination with Kawashima and Miramonti, fails to disclose or suggest each limitation of claim 1. The Office Action cites to the Examiner's Official Notice for the proposition that it is well known in the art to separate primary colors, RGB, in a color filter. Regardless of whether this is correct, such notice does not address the invention of claim 1, as amended, which requires a system that is configured so that when one camera detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and

additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

Because Kawashima, Miramonti, Bos and the Examiner's Official Notice, singly or in combination, do not disclose the limitations of claim 1, these references thus fail to render claim 1 obvious. As claim 12 includes every limitation of claim 1, Claim 12 is likewise considered nonobvious for at least the same reasons.

Accordingly, it is respectfully requested that the rejection of claim 12 under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, and further in view of Bos and Examiner's Official Notice, be reconsidered and withdrawn.

The rejection of claims 15, 24, 25, 29 and 30 under 35 U.S.C. § 103(a), as being unpatentable over Kawashima in view of Miramonti, as applied to claim 28 above, and further in view of Baker, is respectfully traversed based on the following.

Claim 15 directly or indirectly depends from claim 1 and thus includes every limitation of claim 1. As shown in the discussion regarding claim 1 above, the invention of claim 1 is directed to a measurement system that uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As previously discussed, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 1. Neither Kawashima nor Miramonti singly or collectively disclose a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

Similarly, careful inspection of Baker shows that Baker, singly or in combination with Kawashima and Miramonti, fails to disclose or suggest each limitation of claim 1. Baker

discloses a security system and method for controlling the passage of persons and objects between two areas using closed circuit television. The Office Action cites to Baker for disclosing that when there is an absence of a person to be detected, the detection system resets. Baker, however, does not disclose or suggest a system that is configured so that when one camera detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. In Baker, there is no interactivity of elements in the manner claimed in the invention of claim 1. Thus, Baker fails to disclose or suggest each limitation of claim 1.

As stated, the combination of Kawashima and Miramonti fails to disclose or suggest each limitation of claim 28 and thus fails to render claim 28 obvious. Therefore, the combination of Kawashima, Miramonti, as applied to claim 28 above, and further in view of Baker likewise fails to disclose or suggest each limitation of claim 1 and thus fails to render claim 1 obvious. As claim 15 includes every limitation of claim 1, claim 15 is likewise considered nonobvious for at least the same reasons.

The discussion will now turn to claims 24 and 25 which depend directly or indirectly from claim 21 and thus include every limitation of claim 21. As shown in the discussion regarding claim 21 above, the invention of claim 21 is directed to a measurement system that uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As previously discussed, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 21. Neither Kawashima nor Miramonti singly or collectively disclose a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

Similarly, careful inspection of Baker shows that Baker, singly or in combination with Kawashima and Miramonti, fails to disclose or suggest each limitation of claim 21. As stated above, Baker does not disclose or suggest a system that is configured so that when one camera detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. In Baker, there is no interactivity of elements in the manner claimed in the invention of claim 21. Thus, Baker fails to disclose or suggest each limitation of claim 21.

As stated, the combination of Kawashima and Miramonti fails to disclose or suggest each limitation of claim 28 and thus fails to render claim 28 obvious. Therefore, the combination of Kawashima, Miramonti, as applied to claim 28 above, and further in view of Baker likewise fails to disclose or suggest each limitation of claim 21 and thus fails to render claim 21 obvious.

Accordingly, as claims 24 and 25 include every limitation of claim 21, claims 24 and 25 are considered nonobvious over the combination of Kawashima and Miramonti, as applied to claim 28 above, and further in view of Baker.

The discussion will now turn to claims 29 and 30 which depend directly or indirectly from claim 26 and thus include every limitation of claim 26. As shown in the discussion regarding claim 26 above, the invention of claim 26 is directed to a measurement system that uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As previously discussed, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 26. Neither Kawashima nor Miramonti singly or collectively disclose a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to

monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

Similarly, careful inspection of Baker shows that Baker, singly or in combination with Kawashima and Miramonti, fails to disclose or suggest each limitation of claim 26. As stated previously, Baker does not disclose or suggest a system that is configured so that when one camera detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. In Baker, there is no interactivity of elements in the manner claimed in the invention of claim 26. Thus, Baker fails to disclose or suggest each limitation of claim 26.

As stated, the combination of Kawashima and Miramonti fails to disclose or suggest each limitation of claim 28 and thus fails to render claim 28 obvious. Therefore, the combination of Kawashima, Miramonti, as applied to claim 28 above, and further in view of Baker likewise fails to disclose or suggest each limitation of claim 26 and thus fails to render claim 26 obvious.

As claims 29 and 30 include every limitation of claim 26, claims 29 and 30 are considered nonobvious over the combination of Kawashima and Miramonti, as applied to claim 28 above, and further in view of Baker.

Accordingly, it is respectfully requested that the rejection of claims 15, 24, 25, 29 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, as applied to claim 28, and further in view of Baker, be reconsidered and withdrawn.

The rejection of claims 32, 34, 36 and 38 under 35 U.S.C. § 103(a), as being unpatentable over Kawashima in view of Miramonti, as applied to claims 1, 17, 21, and 26 above, and further in view of Ito, is respectfully traversed based on the following.

Claims 32 and 34 are cancelled by this amendment and therefore the rejection of these claims is moot.

Claim 36 depends from claim 21 and thus includes every limitation of claim 21. As shown in the discussion regarding claim 21 above, the invention of claim 21 is directed to a measurement system that uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As previously discussed, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 21. Neither Kawashima nor Miramonti singly or collectively disclose a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

Similarly, careful inspection of Ito shows that Ito, singly or in combination with Kawashima and Miramonti, fails to disclose or suggest each limitation of claim 21. Ito discloses an intruding object monitoring method using an intruding object monitoring system having a first intruding object monitoring apparatus for monitoring an area by inputting images of the area and at least one second intruding object monitoring apparatus for performing a following of an intruding object. The Office Action cites to Ito for using a second camera based on a detected position of an object by a first camera. Ito, however, does not disclose or suggest a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. In Ito, there is no interactivity of elements in the manner claimed in the invention of claim 21. Therefore, Ito fails to disclose or suggest each limitation of claim 21.

As stated, the combination of Kawashima and Miramonti fails to disclose or suggest each limitation of claims 1, 17, 21 and 26 and thus fails to render claims 1, 17, 21 and 26

obvious. Therefore, the combination of Kawashima, Miramonti, as applied to claims 1, 17, 21 and 26 above, and further in view of Ito likewise fails to disclose or suggest each limitation of claim 26 and thus fails to render claim 26 obvious. As claim 36 includes every limitation of claim 21, claim 36 is considered nonobvious over the combination of Kawashima and Miramonti, as applied to claim 1, 17, 21, and 26 above, and further in view of Ito.

The discussion will now turn to claim 38 which depends directly or indirectly from claim 26 and thus includes every limitation of claim 26. As shown in the discussion regarding claim 26 above, the invention of claim 26 is directed to a measurement system that uses a plurality of cameras and measurement portions to accomplish a specific type of object detection and measurement. Specifically, the system is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

As previously discussed, Kawashima and Miramonti singly and collectively fail to disclose the invention of claim 26. Neither Kawashima nor Miramonti singly or collectively disclose a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras.

Similarly, careful inspection of Ito shows that Ito, singly or in combination with Kawashima and Miramonti, fails to disclose or suggest each limitation of claim 26. As discussed previously, Ito does not disclose or suggest a system that is configured so that when one of the cameras detects and measures an object, that detection can trigger the system to control the direction of at least two cameras to monitor the detected object and additionally to then perform a stereoscopic measurement of that object based on images from both cameras. In Ito, there is no interactivity of elements in the manner claimed in the invention of claim 26. Therefore, Ito fails to disclose or suggest each limitation of claim 26.

As stated, the combination of Kawashima and Miramonti fails to disclose or suggest each limitation of claims 1, 17, 21 and 26 and thus fails to render claims 1, 17, 21 and 26 obvious. Therefore, the combination of Kawashima, Miramonti, as applied to claim 1, 17, 21, and 26 above, and further in view of Ito likewise fails to disclose or suggest each limitation of claim 26 and thus fails to render claim 26 obvious. As claim 38 includes every limitation of claim 21, claim 38 is considered nonobvious over the combination of Kawashima and Miramonti, as applied to claim 1, 17, 21, and 26 above, and further in view of Ito.

Accordingly, it is respectfully requested that the rejection of claims 36 and 38 under 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Miramonti, as applied to claims 1, 17, 21, and 26 above, and further in view of Ito, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin LLP Deposit Account No. 18-1260.

Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin LLP Deposit Account No. 18-1260. Any refund should be credited to the same account.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin LLP Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

By: /Thomas N. Tarnay/ Reg. No. 41,341
Thomas N. Tarnay
Registration No. 41,341
Attorney for Applicants

TNT/DDW/llb:bar
SIDLEY AUSTIN LLP
717 N. Harwood, Suite 3400
Dallas, Texas 75201
Direct: (214) 981-3388
Main: (214) 981-3300
Facsimile: (214) 981-3400
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